REMARKS

Upon entry of the present amendment, claims 1, 3-9, 11-17, 19-25 and 27-31 will remain pending in this application. Claims 2, 10, and 18 are canceled in this paper. Claim 26 was previously canceled. Applicant respectfully submits that no new matter is added by the present amendment. In particular, Applicant respectfully submits that the subject matter added to claims 1, 9, 17, and 25 is supported in the Specification at least at paragraph [0045].

Claims 1-25 and 27-31 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Warhol Worms: The Potential for Very Fast Internet Plagues published on February 13, 2002, by Weaver ("Weaver") in view of Simulating and Optimizing Worm Propagation Algorithms published on September 29, 2003, by Vogt ("Vogt"). Claims 25 and 27-31 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Weaver in view of Vogt and further in view of U.S. Patent No. 5,377,207 ("Perlman").

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-25 and 27-31 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Weaver in view of Vogt. Claims 2, 10, and 18 are canceled in this paper. As to claims 1, 9, and 17, the rejection is understood to be based on the premise that Weaver discloses the invention as claimed, except for the limitation of "transferring the data to the another element of the network along with an indication of at least a portion of the addresses remaining in the second set by specifying a range of addresses in the second set of addresses." Vogt is alleged to disclose this limitation at section 4.4 on page 17. Further, Weaver is alleged to disclose the limitation "wherein traversed addresses of the second set of addresses are excluded from the specified range of addresses" in the section "New Infection Strategies."

Applicant respectfully traverses the rejection. In particular, Applicant submits that Weaver does not disclose the limitation "wherein traversed addresses of the second set of addresses are excluded from the specified range of addresses," either in the section "New Infection Strategies" or elsewhere. Weaver discloses at page 4 that "[a]lthough random scanning works well initially, it begins to die out after the number of uninfected hosts goes down. This die down can be reduced through the use of permutation scanning. In a

permutation scan, an already infected machine responds differently than a potential target, as a way of telling the scanning worm that the machine is infected. . . . Worms infected during the hitlist phase or local subnet scanning start just after their point in the permutation and scan through the permutation, looking for vulnerable machines. Whenever it sees an already infected machine, it chooses a new, random start point and proceeds from there. Worms infected by permutation scanning would start at a random point."

Accordingly, it is evident from the above-quoted passage that the worms disclosed in Weaver do see already infected machines. Further, because an already infected machine "responds" to the worm, it appears that the worms disclosed in Weaver attempt to infect or otherwise communicate with machines that are already infected. Therefore, machines that are already infected – that is, machines that have already been traversed – do not appear to be excluded from the specified range of addresses for traversal, as recited in claim 1. If they were excluded from the specified range of addresses, they would not be seen by the worms disclosed in Weaver at all because they would not be traversed again.

Further, claims 1, 9, and 17 have been amended to recite the further limitation "wherein the mapping comprises a function based on a primitive element selected using a primitive polynomial." This limitation is disclosed at least at paragraph [0045] of the instant Specification. Applicant respectfully submits that the cited references do not disclose this limitation. For example, Weaver discloses at page 4 that "[a pseudo random] permutation can be efficiently generated using any block cipher of 32 units with a preselected key: simply encrypt an index to get the corresponding address in the permutation, and decrypt an address to get its index." However, it is not seen where Weaver discloses that the key is a primitive element that is selected using a primitive polynomial.

In view of at least the above amendments and remarks, Applicant respectfully submits that claims 1, 9, and 17 are patentable over Weaver in view of Vogt. Claims 3-8, 11-16, and 19-24 depend from claims 1, 9, and 17, respectively, and are therefore also patentable over Weaver in view of Vogt at least by reason of this dependency. Claim 28 also depends from claim 1 and is also patentable over Weaver in view of Vogt at least by reason of this dependency.

Claims 25 and 27-31 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Weaver in view of Vogt and further in view of Perlman. As to claim 25,

the rejection is understood to be based on the premise that Weaver discloses the claimed limitations, except for the limitation of the mapping function being based on powers of a primitive element. Perlman is cited as disclosing this limitation in its Abstract and at column 13, lines 6-21.

Applicant respectfully traverses the rejection. Claim 25, as amended, is directed to a method for distributed computing propagation. At an act (a), a sequential first set of network addresses is determined. At an act (b), a map of ranges in the sequential first set of network addresses is mapped to a second set of addresses wherein the second set of addresses is a one to one pseudo-random mapping of the range of addresses in the first set and wherein the addresses in the second set are not in increasing address order, wherein the mapping is a function based on powers of a primitive element selected using a primitive polynomial. At a step (c), the second set of addresses is traversed to locate at least two other elements of the network. At a step (d), the addresses of the second set of addresses that were not traversed in act (c) are subdivided into a plurality of portions. Addresses of the second set of addresses that were traversed in act (c) are excluded from the portions. At a step (e), a set of computer readable instructions is transferred to the at least two other elements of the network to carry out a distributed computing function. At a step (f), an indication of each portion of the addresses remaining in the second set is transferred by specifying a range of addresses in the each portion along with a set of computer-readable instructions for carrying out acts (a) through (e) to a respective element of the at least two other elements.

Thus, in the method of claim 25, as in claims 1, 9, and 17, addresses of the second set of addresses that were already traversed are excluded from the portions that are generated at step (d). As discussed above in connection with claim 1, however, Weaver does not disclose the limitation "wherein traversed addresses of the second set of addresses are excluded from the specified range of addresses," either in the section "New Infection Strategies" or elsewhere. Weaver discloses at page 4 that "[a]lthough random scanning works well initially, it begins to die out after the number of uninfected hosts goes down. This die down can be reduced through the use of permutation scanning. In a permutation scan, an already infected machine responds differently than a potential target, as a way of telling the scanning worm that the machine is infected. . . . Worms infected during the hitlist phase or local subnet scanning start just after their point in the permutation and scan through the permutation,

looking for vulnerable machines. Whenever it sees an already infected machine, it chooses a new, random start point and proceeds from there. Worms infected by permutation scanning would start at a random point."

In addition, claim 25 recites further limitations that are not recited in the other independent claims and that further distinguish claim 25 from the prior art of record. For at least these reasons, Applicant respectfully submits that claim 25 is patentable over Weaver in view of Vogt and further in view of Perlman. Claims 27 and 29-31 depend from claim 25 and are also patentable over Weaver in view of Vogt and further in view of Perlman.

Based at least on the above remarks, Applicant respectfully submits that the currently pending claims are patentable over the prior art of record and requests reconsideration and removal of the rejections under 35 U.S.C. § 103(a).

CONCLUSION

In view of the above amendments and remarks, Applicant respectfully submits that the present application is in condition for allowance. Reconsideration of the application is respectfully requested.

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